

REMARKS

Claims 107-148 are currently pending in the application. Of these claims, claims 107, 126, and 137 are independent.

Prior Art Rejections

In the Office Action, claims 1, 3-8, 10-14, 16-26, 28-29, 31-37, 40-41, 43-46, 48-49, 51-53, 58, 60, 85-87, 89, 92-93, 96, 99-101, and 104 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,860,083 to Sukegawa ("Sukegawa").

Claims 2, 54-55, 57, 59, 77, 82-84, 88, 90-91, 94-95, 97-98, 102-103, and 105-106 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sukegawa in view of IBM Technical Disclosure Bulletin NN9411421 ("TDB").

Because claims 1-8, 10-14, 16-26, 28-29, 31-37, 40-41, 43-46, 48-49, 51-55, 57-60, 77, and 82-106 have been canceled without prejudice or disclaimer, Applicant respectfully submits these rejections are no longer applicable.

New Claims

New independent claims 107, 126, and 137 recite performance of one or more queued operations in response to a miss in non-volatile cache memory for a read request.

Applicant respectfully submits neither Sukegawa nor TDB, whether alone or in any combination with one another, taught or suggested such feature(s) as claimed.

Applicant respectfully submits the conclusion of obviousness in the Office Action is drawn in hindsight only after having read Applicant's claims.

Sukegawa specifically taught in column 10 at lines 11-14 that updated data in non-volatile cache area 10C is updated to HDD 2 "after a certain amount of accumulated updated data is saved in the non-volatile cache area 10C" and that "[a]s a result, the frequency of access to the HDD 2 is reduced."

The conclusion in the Office Action that it would have been obvious to perform such updates to HDD 2 when HDD 2 is accessed for a read request appears to be premised on the notion that this would further reduce the frequency of disk accesses.

Applicant respectfully submits, however, that performing such updates to HDD 2 for read requests would not further reduce frequency of disk accesses. Applicant respectfully submits that the frequency of disk accesses is the number of accesses to the disk per unit of time. Applicant also respectfully submits that Sukegawa equated a disk access with a separate read or write command. Sukegawa, for example, equated "access requests" with "read/write commands" in column 4 at lines 28-29. Applicant therefore respectfully submits that performing one read of HDD 2 with n updates to HDD 2 would amount to 1+n disk accesses and not just one.

Applicant also respectfully submits that performing updates to HDD 2 every time HDD 2 is accessed for a read request would seem to spread updates to HDD 2 over time which contradicts the explicit teaching by Sukegawa to wait to perform updates to HDD 2 until a certain amount of accumulated updated data is saved in the non-volatile cache area 10C. Indeed, performing updates to HDD 2 when HDD 2 is accessed for a read request would seem to counter any accumulation of updated data in non-volatile cache area 10C. That Sukegawa taught away from spreading updates to HDD 2 over time is also supported in column 9 at lines 53-55: "the frequency of access to the HDD 2 can be decreased since updated data is not written in the HDD 2 each time data updating occurs."

Noting the remaining new claims depend from independent claim 107, 126, or 137, Applicant therefore respectfully submits new claims 107-148 are patentable.

Note that there may be additional reasons for the patentability of claims. For example, there may be additional reasons why the dependent claims are patentable.

It is respectfully submitted this patent application is in condition for allowance, for which early action is earnestly solicited.

The Examiner is invited to telephone the undersigned to help expedite the prosecution of this patent application.

Respectfully submitted,

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